ENHANCING RADAR INTERPRETATION AND WARNING SKILLS THROUGH ANALYSIS OF A SEVERE MCS EVENT IN KENTUCKY

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QUESTION SHEET 1

1. Briefly note surface, upper-air, and sounding data from 0000 UTC. Then consider KLVX WSR-88D data from 0528 to 0548 UTC. Note any important features in radar data. What type of warnings and/or statements, if any, would you issue and for what counties during this time based on your analysis? Based on radar trends during this period, what are your thoughts concerning the subsequent evolution of the line?

2. Starting at 0548 UTC, consider yourself the radar operator responsible for issuing warnings, as needed, for the event. You will be given radar data at 5 to 10-minute intervals; we also will loop reflectivity data to help visualize convective movement and trends. Based on various WSR-88D data and knowledge of the environment, specify the type of warning(s) and county(s) affected, if any. Concentrate on important radar signatures and trends for each data time, i.e., give physical reasons for your warning decisions, and write them below.

Issuance Time	**Warning Type**	**County(s)**	**Important Radar Signatures/Trends**

Issuance Time	Warning Type	County(s)	Important Radar Signatures/Trends

QUESTION SHEET 2

1. Review 0.5 deg base velocity and reflectivity data at 0618 UTC. Explain what is occurring in base velocity data versus the corresponding reflectivity image.

2. Based on the 0643 UTC 0.5 deg base reflectivity image, sketch below an area that represents/outlines the yellow (35 dBZ or more) returns. Next to this sketch, also sketch the area that outlines the highest reflectivity values (45-50 dBZ or more) in the eastern portion of the MCS (i.e., the bowing segment). Do you note much difference in your 2 sketches? Finally, label on your second sketch of highest returns, likely locations for storm-scale frontal boundaries, storm-scale low or inflection point, cyclonic circulations and tornadoes, the rear inflow jet, weak echo channel, and location of maximum wind damage.

3. Again based on the 0643 UTC 0.5 deg base reflectivity image, briefly discuss the importance of the orientation of the convection in the western/southwestern portion of the MCS to the convection's direction of movement to the location of the convective outflow boundary. What is the main hazardous weather threat in this area?